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Biosecurity Risk Assessment

At

Plot 3A – Ecological Compensation & Enhancement Area

Wrexham Industrial Estate
Bryn Lane
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NGR: SJ 39675 50371

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1 INTRODUCTION

1.1 Author and qualifications

This report is written and compiled by Tom Kenwright BSc MSc, UES Senior Ecologist for United Environmental Services Ltd (UES).

The report has been verified by Toby Hart BSc MCIEEM PIEMA, UES Managing Director.

1.2 Proposed development and previous survey information

The proposed development is for the change of use of the site from agriculture to an ecological area and the creation of twenty ponds and two ditches. The proposed development is for ecological enabling works on land in connection with a proposed adjacent employment development known as 'Kingmoor' and referred to in this document as the 'Main Application', for which a separate planning application has been submitted.

The site for the enabling works is in the area referred to as the "Eastern Field" but the application boundary also includes track access from the west and through the Main Site as there is no vehicular access to the Eastern Field from the east. Most of the course of the access track is along an existing route and hardstanding within the site and an existing bridge over a watercourse, with only minor works required to create a stable surface required in isolated areas to reach the Eastern Field.

A Preliminary Ecological Appraisal (PEA) was undertaken of the Main Site by UES in September 2021. This survey was subsequently extended to include an assessment of the Eastern Field by UES in June 2022. The eastern field comprises two agricultural grassland fields that are divided and bordered by hedgerows and trees. A dry and unvegetated ditch runs along part of the eastern boundary and a pond surrounded by willow scrub is present within the northernmost field.

Great crested newt (GCN) *Triturus cristatus* presence / absence, population size class assessment and environmental DNA (eDNA) surveys were undertaken of the Main Site and surrounding ponds by UES across March to June 2022 (see report reference UES03448/09).

During the surveys a medium population of GCNs was recorded across all surveyed onsite and offsite ponds, with a combined peak adult count of forty-nine. However, access was not granted to several offsite ponds, therefore it is likely the GCN population in the area will be higher.

As GCNs are known to be present within the Eastern Field where the enabling works will take place, a European protected species (EPS) licence has been submitted to Natural Resources Wales prior to the commencement of works to commence.

As suite of additional protected species and botanical surveys were also undertaken of the Main Site across 2022.

During the surveys, no invasive plant species were observed within the Eastern Field. Individual stands of the invasive species Himalayan balsam *Impatiens glandulifera*, hollyberry cotoneaster *Cotoneaster bullatus* and an additional unidentified cotoneaster species were observed within the Main Site. These species were located over 500m west of the Eastern Field at the closest point.



No evidence of Chytrid, Ranavirus or any other amphibian diseases were observed during GCN surveys within the Eastern Field, the Main Site or any of the offsite ponds that were surveyed.

1.3 Report objectives and structure

This document sets out all the necessary procedures and mitigation measures that will be implemented to avoid the spread of invasive species during works on site and to avoid any potential breaches of legislation. This document has been prepared to discharge Condition 3 of approved planning permission P/2023/0640, granted by Wrexham Borough Council. Condition 3 reads as follows:

'No development, including site clearance, with the potential to impact on invasive species e.g., chytrid, shall commence until a site wide Biosecurity Risk Assessment has been submitted to and approved in writing by the Local Planning Authority. The risk assessment shall include measures to control, remove or for the long-term management of invasive species both during construction and operation. The Biosecurity Risk Assessment shall be carried out in accordance with the approved details.'

2 RISK ASSESSMENT

2.1 Background

2.1.1 Himalayan balsam

First introduced as a garden plant in the UK in 1839, it now rapidly colonises riverbanks and areas of damp ground. It grows up to 3m high and the stems are pinkish-red, hollow and often jointed with shiny, dark green, lanceolate leaves. The characteristic purplish-pink slipper shaped flowers appear from June to October.

When touched, the mature seed pods of Himalayan balsam explode, scattering the seeds up to 7m away. The seeds can be transported by water or wind, remaining dormant for up to 2 years before germination and can remain viable for 18 and 36 months.

Himalayan balsam out competes native plants as it colonises quickly and creates tall dense stands shading any plants below. It also produces much more nectar and therefore attracts pollinating insects, possibly to the detriment of native flowering plants. It has no natural forms of control in the UK.

2.1.2 Cotoneaster

Cotoneasters were first introduced to the UK in the 19th century from Eastern Asia as an ornamental plant. Depending on the species definition used, between 70 and 300 different species of Cotoneaster are known. Of these, only five are listed as invasive under Schedule 9 of the Wildlife & Countryside Act 1981 (as amended):

- Wall cotoneaster *Cotoneaster horizontalis*
- Hollyberry cotoneaster *Cotoneaster bullatus*
- Himalayan cotoneaster *Cotoneaster simonsii*
- Small-leaved cotoneaster *Cotoneaster microphyllus*
- Entire-leaved cotoneaster *Cotoneaster integrifolius*

A single species Cotoneaster is native to the UK; *Cotoneaster integerrimus*, known as wild or common cotoneaster. This species is restricted in distribution and is only found growing wild on the Great Orme in Llandudno, North Wales.

Whilst only the above five species have legal requirements for control, numerous other species of cotoneaster can show invasive tendencies.

Once cotoneaster is established, it can dominate areas and outcompete native flora by creating dense thickets. Cotoneaster predominantly causes issues on limestone cliffs, pavements and screes, through outcompeting rare native plant species. They can also form an extensive root system which can be difficult to remove. Cotoneaster is spread through seeds contained within the berries, which are often eaten and spread by birds.

In habitats of lower value, especially in urban areas, many considered that cotoneaster species may provide a net benefit to local ecosystems as the flowers are highly attractive to bees and birds eat the berries in the winter when other food sources may be scarce.

2.1.3 Other invasive plant species

No other invasive plant species have been recorded on site or offsite during the suite of surveys. Due to the proposed development works and the sites close proximity to residential and industrial areas, there remains some, albeit limited, potential for additional invasive plant species to be accidentally introduced or to naturally colonise the site in the future. Invasive species considered most likely to colonise the site in the future include:

Giant hogweed *Heracleum mantegazzianum*, Japanese knotweed *Reynoutria japonica*, other cotoneaster species, three-cornered garlic *Allium triquetrum*, montbretia *Crocasmia* × *crocosmiiflora*, variegated yellow archangel *Lamiastrum galeobdolon* subsp. *argentatum*, rhododendron *Rhododendron ponticum*, Virginia creeper *Parthenocissus quinquefolia*, false Virginia creeper *Parthenocissus vitacea* and Japanese rose *Rosa rugosa*.

These species have been listed as they are commonly planted within gardens and landscaped areas or are known to easily spread, particularly along watercourses. In addition, the following invasive aquatic species are considered most likely to potentially colonise the newly created ponds and ditches in the future:

Water fern *Azolla filiculoides*, New Zealand pygmyweed *Crassula helmsii*, Parrot's feather *Myriophyllum aquaticum* and floating pennywort *Hydrocotyle ranunculoides*.

2.1.4 Amphibian diseases

Numbers and incidences of amphibian diseases have increased in the UK in recent years. The most notable of these are chytridiomycosis and ranavirus. Chytridiomycosis is caused by two species of microscopic fungi *Batrachochytrium dendrobatidis* ("Bd") and *B. salamandrivorans* ("Bsal"), which are often simply referred to as "chytrid". Chytrid infection has been responsible for mass mortalities of amphibians with declines and extinctions in some species on six continents, including Europe. Ranavirus (ranaviral disease), caused by infection with one of many types of ranavirus, also has a global distribution, though it appears to cause population declines less frequently than chytrid. Other infectious agents are present in amphibians, such as herpesvirus and the parasitic infections *Amphibiocystidium* and *Ribeiroia*, however much less is known about them and they are not considered to be as widespread.

Ranavirus is now commonly reported from parts of the UK and infection can lead to local population declines of up to 80% in common frogs *Rana temporaria*. Whilst Bd caused chytrid is now known to be widespread in the UK, it does not appear to have caused the types of mass die-offs reported in Europe. However, such events can be difficult to detect even when they are occurring and it can take many years for the full effects of disease introduction to manifest. Whilst Bsal is known to be present in captive amphibians in the UK, it has not yet been detected in the wild. However, it is believed to be a major potential threat to newt health should it become established, particularly the great crested newt which is known to be highly susceptible.

Amphibian diseases are frequently found to be spread by human activity and the introduction of non-native species.

2.2 Legislation

Relevant legislation regarding invasive species include:

- *Wildlife & Countryside Act 1981 (as amended)*;
Section 14(2) of the Wildlife and Countryside Act 1981 (WCA 1981) states that “...if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence.” Hollyberry cotoneaster is listed under Schedule 9. Anyone convicted of an offence under Section 14 of the WCA 1981 may face a fine of £5,000 and/or 6 months imprisonment, or 2 years and/or an unlimited fine on indictment.
- *Invasive Alien Species (Enforcement and Permitting) Order 2019*;
Section 3 of the Invasive Alien Species (Enforcement and Permitting) Order 2019 (IASO 2019) states that “...any person who plants or otherwise causes to grow in the wild any specimen which is of a species of plant which is included in Part 2 of Schedule 2 is guilty of an offence”. Himalayan balsam is listed in Schedule 2. Anyone convicted of an offence under Section 3 of the IASO 2019 may face a fine and/or 6 months imprisonment, or 2 years and/or a fine on indictment.
- *The Environmental Protection Act 1990 (EPA, 1990)*;
The EPA 1990 contains a number of legal provisions concerning “controlled waste”, which are set out in Part II. Any soil or plant material contaminated with invasive plant species listed under Schedule 9 of the Wildlife and Countryside Act or the Invasive Alien Species Order that you discard, intend to discard or are required to discard is likely to be classified as controlled waste. The most relevant provisions in the EPA are in section 33 (1) (a) and (1) (b). These create offences to do with the deposit, treating, keeping or disposing of controlled waste without a permit. Section 33 (1) (c) makes it an offence to keep, treat or dispose of controlled waste in a manner likely to cause pollution of the environment or harm to human health. Section 34 places duties on any person who imports, produces, carries, keeps, treats or disposes of controlled waste. Waste must be handled responsibly and in accordance with the law at all stages between its production and final recovery or disposal.
- *Control of Pesticides Regulations 1986*;
The Control of Pesticides Regulations 1986 require any person who uses a pesticide to take all reasonable precautions to protect the health of human beings, creatures and plants, safeguard the environment and in particular avoid the pollution of water.
- *Hazardous Waste Regulations 2005 (HWR 2005)*;
The HWR 2005 contain provisions about the handling and movement of hazardous waste. Hazardous wastes are defined by reference to regulation 6 of the HWR 2005. Consignment notes must be completed when any hazardous waste is transferred, which include details about the hazardous properties and any special handling requirements. If a consignment note is completed, a waste transfer note is not necessary. Untreated material from invasive plant species is not classed as hazardous waste, but material containing these species which has been treated with certain herbicides, may be classified as hazardous waste.
- *Waste (England and Wales) Regulations 2011*;
Waste must be transferred to an authorised person, in other words a person who is either a registered carrier or exempted from registration by the Waste Regulations. A waste transfer note must be completed and signed giving a written description of the waste as per regulation 35 of the Waste Regulations. This must be sufficient to enable the receiver

of the waste to handle it in accordance with their own duty of care. Failure to comply with these provisions is an offence.

- *Environmental Permitting (England and Wales) Regulations 2010 (EPR 2010);*
The EPR 2010 includes reference to the 'Exercise of relevant functions' in Schedule 9, paragraph 4. These objectives are derived from Article 13 of the European Waste Framework Directive. These objectives states that necessary measures shall be taken to ensure that waste is recovered or disposed of "*without endangering human health and without using processes or methods which could harm the environment and in particular without – risk to water, air, soil, plants or animals; or causing nuisance though noise or odours; or adversely affecting the countryside or places of special interest*"

2.3 Impacts without mitigation

Hollyberry cotoneaster is listed under are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and Himalayan balsam is listed under Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019. As such, it is an offence to plant or otherwise cause these species to grow in the wild, including as a result if development works.

Without mitigation, site clearance and setting out could result in the introduction of Himalayan balsam, hollyberry cotoneaster or any other invasive species on and off site. This could result in a breach of legislation. Invasive plant species could also colonise the site in the through, either naturally or through accidental introduction. If this happens, the invasive species could outcompete native species and invasive aquatic plant species could swamp ponds, reducing the water quality, resulting in declines in habitat suitability and breeding opportunities for GCNs and other amphibians.

Without mitigation, site clearance and ongoing site works could result in the introduction of amphibian diseases. This is unlikely given the scope of the works and the lack of interaction with amphibians and existing ponds. ongoing management works and amphibian monitoring surveys have a much greater risk of introducing or spreading an amphibian disease given the frequency and likelihood of contact with amphibians or standing water.



3 BIOSECURITY MEASURES

The following measures are designed with the primary objective of reducing the potential for the spread of invasive plant species or amphibian diseases to the development site.

3.1 Invasive plant species

3.1.1 Biosecurity measures

No invasive plant species have been recorded on site or within the immediate vicinity of the site. As such, there is no reason or requirement to implement any control or eradication measures. Despite this, Himalayan balsam and hollyberry cotoneaster have been observed within the adjacent Main Site, through which construction vehicles will pass to access the working area. Additionally, other invasive species are known from the wider Wrexham Industrial Estate and there remains the residual risk of invasive species being brought onto site.

As such, the following biosecurity prevention measures will be implemented during the construction and operational phases of the development:

- All contractors attending site must ensure their boots are washed prior to access as detailed in the disinfection procedure below.
- For any vehicles entering the site, all wheels will be washed using the disinfection procedure detailed below.
- All site contractors and surveyors visiting the site will be made aware of the potential for invasive species to colonise the site in the future.

3.1.2 In the event of invasive plant species colonisation

In the unlikely event that an invasive plant species is observed on site during the construction or operational phase of the development, the following control measures will be implemented.

- The type and location of the invasive species will be recorded and details will be provided to the site manager. Following this, these details will be provided to all contractors or surveyors with the potential to access the site.
- Advice from an invasive species control specialist or an appropriately qualified ecologist will be sought on the most appropriate way to eradicate the particular invasive species present. It is not possible to detail how any potential future infestations of native species will be eradicated as there is no standard approach, with chemical, mechanical, eradication methods, potentially requiring single or repeat approaches.
- Prior to the commencement of any eradication measures and immediately following identification, the invasive species and an appropriate buffer zone (advised by invasive species control specialist or ecologist e.g. minimum would be 0.5m for cotoneaster and maximum would be 5m for Japanese knotweed) will be demarcated through the use of temporary fencing or stakes and hazard tape. No access will be permitted into the buffer zone unless for the purposes of eradicating invasive species. Signage detailing

the presence of an invasive species and the prohibition of access into the buffer zone will also be provided.

3.2 Amphibian diseases

ARG UK consider that controlling outbreaks of amphibian diseases in the wild is practically impossible except under very particular circumstances, and so prevention is the best strategy. Alongside prevention, ARG UK highlight the importance of reporting signs of infection, so that we can learn more about diseases and their effects and develop an early warning system for detection of novel threats.

3.2.1 Biosecurity measures during construction phase

The following biosecurity mitigation measures are to be implemented during the construction phase of the development:

- All contractors attending site must ensure their boots are washed prior to access as detailed in the disinfection procedure below.
- For any vehicles entering the site, all wheels will be washed using the disinfection procedure detailed below.

3.2.2 Biosecurity measures during operational phase

During the operational phase, the site will act as a nature reserve that will not be publicly accessible unless agreed via a permit system, which will only be granted to local interest groups and for educational purposes e.g. for schools, local scout groups etc. The limited access to the public will significantly reduce the risk of disease introduction, however ongoing habitat management will be undertaken in addition to annual GCN monitoring surveys.

To reduce the risk of spreading disease onto site, the following biosecurity mitigation measures are to be implemented during any future site habitat management works or monitoring surveys:

- All contractors, surveyors, group leaders (for education activities) attending site must read this risk assessment and agree to implement all biosecurity measures.
- The handling of amphibians will only be undertaken when necessary, which is considered to be limited to monitoring surveys, moving amphibians to areas of safety during management works or undertaking pond-dipping as part of public engagement or educational visits.
- If handling amphibians is required or if contact with pond water is necessary, powder-free disposable vinyl gloves will be used and will be rinsed before contact with the amphibians or pond water. Vinyl will be used rather than latex or nitrile because the latter two may be harmful to amphibians.
- Survey equipment (bottle traps, canes, nets, etc) and any containers used to hold amphibians must be disinfected prior to each monitoring survey visit, as detailed in the disinfection procedure.

- If entering the water, footwear must be washed and disinfected (see disinfection procedures below) immediately prior to and after the site visit.
- Following exposure to amphibians or pond water, all clothing is to be washed on a 40°C cycle with biological detergent. If contractors undertaking habitat management or surveyors undertaking monitoring surveys have visited another site immediately prior to visiting this site, a change of clothes must be brought and used prior to access.
- No amphibians will be brought onto site and all amphibians captured during monitoring surveys will be released at the location of capture.
- Any dead or obviously sick amphibians will be treated as a high infection risk and will not be handled unless necessary. Any potential incidences of an amphibian disease will be reported as detailed in the section 3.2.3 below.

3.2.3 In the event of disease outbreak

In the unlikely event that a potential amphibian disease is recorded on site, the following additional biosecurity measures will be implemented:

- Use field equipment dedicated to the target site only.
- Survey equipment will be stored on site where possible, between surveys.
- The number of survey visits will be kept to the minimum necessary.
- Surveyor numbers attending will be limited to the lowest practicable number and surveyors must not have visited any other bodies of standing water the same day.
- Equipment will be disinfected between individual waterbodies within the site.
- A fresh pair of gloves will be used for each waterbody surveyed, to minimise the chance of amplifying infection levels.

In the event of a disease outbreak on site, Natural Resources Wales will be consulted on the potential to alter the methodology of the monitoring surveys to only include egg searching and torching surveys to monitor GCN populations, opposed to bottle-trapping and netting, which will significantly reduce the contact with amphibians and contaminated water, and will significantly reduce the risk of further disease spread.

Any suspected disease outbreak will be reported via The Garden Wildlife Health project (www.gardenwildlifehealth.org), which has been established to investigate disease in a range of native wildlife species in Great Britain. Photographs of the affected animal(s), the location and details of the symptoms observed are key pieces of information to report.

3.2.4 Disinfection procedure

The following procedure will be followed when disinfecting, vehicle wheels, survey equipment and boots prior to entry onto the site:

1. Use brush to scrub off any debris, plant fragments, mud etc.
2. Rinse with water.
3. Soak in 4% bleach solution for at least 5 minutes, or Virkon for at least one minute.
4. Rinse with clean water. Vehicles wheels should instead be sprayed with disinfectant and allowed left for 5 minutes prior to entry.
5. Allow to dry before next use (wont be possible if multiple sites are being visited in a single day or for vehicle wheels).
6. Keep field equipment inside plastic bags during transit and storage (after thorough drying) to reduce the chance of transmitting pathogens.

Disinfection of survey equipment and boots can be undertaken anywhere prior to visitation. Disinfection of vehicle wheels must be undertaken at the site boundary immediately prior to entry onto site.

Disinfectant solutions should be disposed of following the supplier's instructions. Unless otherwise stated, used disinfectant solutions should be poured directly into a drain connected to the sewerage system and flushed with clean water (note that not all drains are connected to sewerage systems), or disposed of as hazardous waste. Used gloves should be disposed of as domestic waste.

3.2.5 Disease identification

Chytrid

Chytrid is known to infect all UK amphibian species and whilst it can often be symptomless, it is characterised by multiple skin erosions and ulcerations all over the body, particularly the tips of the toes.

Additional symptoms can also include:

- Excessive shedding of skin
- Reddening or discoloured skin
- Abnormal posture
- Unusual behaviour such as nocturnal species being active during the day or remaining out in the open for long periods of time.

Ranavirus

All species of amphibian in the UK are considered to be susceptible to ranavirus infection, but the common frog and the common toad *Bufo bufo* are most frequently reported with the disease.

Ranavirus can be tricky to diagnose without a post mortem, but animals may display one or more of the following symptoms:

- Abnormal wasting (emaciation)
- Redness of the skin (erythema)
- Skin ulcers or sores
- Bleeding (systemic haemorrhaging), especially from mouth/anus
- Breakdown of limbs (limb necrosis)



- Eye problems

The most common symptom is simply to find a large number of dead frogs in a short space of time. The animals are often thin and lethargic before death.



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